

This listing of claims will replace all prior versions of claims in the application.

- Claim 1. (previously presented) A coated substrate comprising:
- a) an organic underlayer composition coating layer on a substrate, the underlayer composition comprising a component that comprises aromatic and/or alicyclic groups and a component that comprises one or more chromophore groups;
 - b) a photoresist composition coating layer over the underlayer composition, the photoresist comprising a photoactive component and an Si-containing component.
- Claim 2. (previously presented) The coated substrate of claim 1 wherein the underlayer composition comprises an integral component that comprises both i) aromatic and/or alicyclic groups and ii) chromophore groups.
- Claim 3. (previously presented) The coated substrate of claim 1 wherein the underlayer composition comprises a first component that comprises aromatic and/or alicyclic groups and a second component distinct from the first component that comprises chromophore groups.
- Claim 4. (currently amended) The coated substrate of claim 1 ~~any one of claims 1 through 3~~ wherein the chromophore groups comprise anthracene groups.
- Claim 5. (currently amended) The coated substrate of claim 1 ~~any one of claims 1 through 4~~ wherein the underlayer composition component that comprises aromatic and/or alicyclic groups comprises optionally substituted phenyl groups, optionally substituted naphthyl groups, optionally substituted adamantyl groups, optionally substituted norbornyl groups, or optionally substituted isobornyl groups.
- Claim 6. (currently amended) The coated substrate of claim 1 ~~any one of claims 1 through 5~~ wherein the underlayer composition comprises a mixture of at least two distinct resins.

Claims 7-21. (cancelled)

Claim 22. (previously presented) A method for forming a photoresist relief image comprising:

- a) applying an organic underlayer composition coating layer on a substrate, the underlayer composition comprising a component that comprises aromatic and/or alicyclic groups and a component that comprises one or more chromophore groups;
- b) applying a photoresist composition coating layer over the underlayer composition, the photoresist composition comprising a photoactive component and an Si-containing component.

Claim 23. (previously presented) The method of claim 22 wherein the photoresist layer is exposed to radiation having a wavelength of less than 300 nm.

Claim 24. (previously presented) The method of claim 22 wherein the photoresist layer is exposed to radiation having a wavelength of about 248 nm.

Claim 25. (currently amended) The method of claim 22 ~~any one of claims 22 through 24~~ wherein the underlayer composition is thermally treated prior to applying the photoresist composition.

Claim 26. (currently amended) The method of claim 22 ~~any one of claims 22 through 25~~ wherein the underlayer composition is crosslinked prior to applying the photoresist composition.

Claim 27. (currently amended) The method of claim 22 ~~any one of claims 22 through 26~~ wherein the underlayer composition comprises an integral component that comprises both i) aromatic and/or alicyclic groups and ii) chromophore groups.

Claim 28. (currently amended) The method of claim 22 ~~any one of claims 22 through 26~~ wherein the underlayer composition comprises a first component that comprises aromatic and/or alicyclic groups and a second component distinct from the first component that comprises chromophore groups.

Claim 29. (currently amended) The method of claim 22 ~~any one of claims 22 through 28~~ wherein the chromophore groups comprise anthracene groups.

Claims 30-50. (cancelled)

Claim 51. (previously presented) An article of manufacture comprising a substrate having coated thereon a multilayer photoresist system,
the system comprising:

- a) an organic underlayer composition coating layer on a substrate, the underlayer composition comprising a component that comprises aromatic and/or alicyclic groups and a component that comprises one or more chromophore groups;
- b) a photoresist composition coating layer over the underlayer composition, the photoresist comprising a photoactive component and an Si-containing component.

Claim 52. (previously presented) The article of claim 51 wherein the substrate is a microelectronic wafer substrate, an optoelectronic device substrate or a waveguide.

Claim 53. (previously presented) An underlayer composition for use with an overcoated silicon-containing photoresist, the underlayer composition comprising:
a first resin that comprises phenolic groups, and a second resin that comprises anthracene groups.

Claim 54. (previously presented) The underlayer composition of claim 53 wherein the first resin is a novolak resin or a poly(vinylphenol) resin.

Claims 55-59. (cancelled)